

REMARKS/ARGUMENTS

Favorable reconsideration of this application as presently amended and in light of the following discussion is respectfully requested.

Claims 1 and 2 are presently active in this case. Claims 1 and 2 are amended and Claim 3 is canceled by the present amendment. Claims 4-14 are withdrawn from consideration. Support for the amendments can be found in the original claims, at least at page 9, lines 23-25, page 10, lines 5-8 of the specification, and Fig. 2. No new matter has been added.

The outstanding Office Action objects to Claims 1 and 2 due to informalities; rejects Claim 1 under 35 U.S.C. § 102(e) as anticipated by Han (U.S. Pub. No. 2002/0011620); and rejects Claim 2 under 35 U.S.C. § 103(a) as unpatentable over Han in view of Liao, et al. (U.S. Patent No. 2002/0022321, herein "Liao").

Applicants and Applicants' representative wish to thank Examiner Hu for the interview granted on November 22, 2004. During that interview the outstanding objections and rejections were discussed in detail.

In regard to the objections to Claims 1 and 2 because of informalities, Applicants have amended Claims 1 and 2 to further clarify the claims. Accordingly, Applicants respectfully request withdrawal of the objection.

In regard to the rejection of Claim 1 under 35 U.S.C. § 102(e) as anticipated by Han, Applicants respectfully traverse the rejection for the following reasons.

Claim 1 recites a semiconductor device including a capacitor that includes a lower electrode which has an upper surface and a side surface and has an opening on the upper surface. A film is provided to cover and plug at least an entry of the opening, and a dielectric film of the capacitor is provided to face the upper surface and the outer side surface of the lower electrode. The dielectric film does not fall into the opening.

Han does not disclose or suggest the above-mentioned film feature of Claim 1. The outstanding Office Action cites reference numeral 29 of Fig. 2D in Han to meet the claim feature of the film; however, the above-mentioned film feature of Claim 1 is not disclosed in Han. In Han, a TaN film 29 is formed on the surface of the crystallized Ta metal film 28.¹ However, in Han, the TaN film 29 does not cover and plug the entry of the opening on the upper surface of the crystallized Ta metal film 28. Nowhere does Han disclose or suggest a film provided to cover and plug at least an entry of the opening on the upper surface of the lower electrode, as recited in Claim 1, as amended. The TaN film 29 in Han does not have such a structure.

Moreover, Han does not disclose or suggest the above-mentioned dielectric film feature of Claim 1. The outstanding Office Action cites reference numeral 32a of Fig. 2D in Han to meet the claim feature of the dielectric film; however, the above-mentioned dielectric film feature of Claim 1 is not disclosed in Han. In Han,

... the CMP processing is performed until the surface of the second interlayer insulation film 26 is exposed so that the lower electrode 30 is electrically insulated from other nearby lower electrodes 30.²

Then, a TaON film 32 as a dielectric is formed on the surface of the lower electrode 30 and the second interlayer insulation film 26 . . .³

[T]he TaON film 32, which was in an amorphous state, becomes a TaON film 32a in a crystallized state.⁴

In other words, in Han, a dielectric film faces the upper surface and inner surfaces of the lower electrode. Accordingly, in Han, the dielectric film falls into the opening on the upper surface of the lower electrode. Nowhere does Han disclose or suggest a dielectric film of the capacitor which is provided to face the upper surface and which does not fall into the opening on the upper surface of the lower electrode, as recited in Claim 1, as amended. The TaON film

¹ Paragraph [0031], lines 2-3 of Han.

² Paragraph [0032], lines 5-8 of Han.

32a in Han does not have such a structure.

Accordingly, Applicants respectfully submit that the rejection of Claim 1 under 35 U.S.C. § 102(e) should be withdrawn.

In regard to the rejection of Claim 2 under 35 U.S.C. § 103(a) as unpatentable over Han in view of Liao, Applicants respectfully traverse the rejection for the following reasons.

Claim 2 depends on Claim 1. As discussed above with respect to Claim 1, Han does not teach or suggest each and every element recited in Claim 1. Liao does not cure the deficiencies of Han in this regard.

In view of the failure of Han and Liao to teach or suggest all features of Claim 1, Applicants respectfully submit that Han in view of Liao does not render Claim 1 obvious under 35 U.S.C. § 103(a). Since Claim 2 depends on Claim 1, Applicants respectfully request that the rejection of Claim 2 under 35 U.S.C. § 103(a) be withdrawn.

In view of the foregoing remarks, Applicants respectfully submit that each and every one of Claims 1 and 2 defines patentable subject matter, and that the application is in condition for allowance. Applicants respectfully request reconsideration and reexamination of this application and timely allowance of the pending claims.

Respectfully submitted,

OBLON, SPIVAK, McCLELLAND,
MAIER & NEUSTADT, P.C.



Gregory J. Maier
Attorney of Record
Registration No. 25,599

Customer Number
22850

Tel: (703) 413-3000
Fax: (703) 413 -2220
(OSMMN 08/03)

Surinder Sachar
Registration No. 34,423

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³ Paragraph [0033], lines 5-7 of Han.

⁴ Paragraph [0034], lines 6-8 of Han.